

CLAIMS

1. An adhesive sheet, comprising a polymer component, the breaking strength of the adhesive sheet in a B-stage state being from 0.1 to 10 MPa at 25°C, and the breaking elongation thereof being from 1 to 40% at 25°C.

2. An adhesive sheet, comprising a polymer component, the elastic modulus of the adhesive sheet in a B-stage state being from 1 to 3000 MPa in measurement of the dynamic viscoelasticity at 25°C and 10 Hz, and the elastic modulus thereof being from 4000 to 20000 MPa in measurement of the dynamic viscoelasticity at 25°C and 900 Hz.

3. An adhesive sheet, comprising a polymer component, the elastic modulus of the adhesive sheet in a B-stage state being from 1 to 3000 MPa in measurement of the dynamic viscoelasticity at 25°C and 10 Hz, and the elastic modulus thereof being from 4000 to 20000 MPa in measurement of the dynamic viscoelasticity at -20°C and 10 Hz.

4. The adhesive sheet according to claim 2 or 3, comprising the polymer component, and

the elastic modulus of the adhesive sheet in a B-stage state being from 0.1 to 20 MPa in measurement of the dynamic viscoelasticity at 60°C and 10 Hz.

5. The adhesive sheet according to any one of claims 2 to 4, comprising the polymer component,

the breaking strength of the adhesive sheet in a B-stage state being from 0.1 to 10 MPa at 25°C, and the breaking elongation thereof being from 1 to 40% at 25°C.

6. The adhesive sheet according to any one of claims 1 to 5, wherein the polymer component has a glass transition temperature of -30 to 50°C, and a weight-average molecular weight of 50000 to 1000000.

7. The adhesive sheet according to claim 6, wherein the polymer component, which has a glass transition temperature of -30 to 50°C and a weight-average molecular weight of 50000 to 1000000, is contained in an amount of 50% or less of the total weight of the adhesive sheet from which the weight of a filler is removed.

8. The adhesive sheet according to claim 7, further comprising a thermosetting component.

9. The adhesive sheet according to claim 7 or 8, further comprising 5 to 70% by weight of the filler.

10. The adhesive sheet according to any one of claims 1 to 9, wherein the content of remaining volatile matters is from 0.01 to 3% by weight.

11. The adhesive sheet according to any one of claims 1 to 10, which has a film thickness of 1 to 250 μm .

12. A dicing tape integrated type adhesive sheet formed by lamination of the adhesive sheet according to any one of claims 1 to 11 and a dicing tape.

13. A method of producing a semiconductor device, comprising:

I) the step of sticking the adhesive sheet according to any one of claims 1 to 11 onto a semiconductor wafer,

II) the step of rendering the semiconductor wafer permissible to be cut,

III) the step of sticking a dicing tape onto the adhesive sheet in order of I-II-III, II-I-III, or I-III-II, and further comprising:

IV) the step of cutting the semiconductor wafer and the adhesive sheet, thereby yielding adhesive-sheet-stuck semiconductor chips which are individual pieces, and

V) the step of bonding the adhesive-sheet-stuck semiconductor chips onto a semiconductor-chip-mounting support member.

14. A method of producing a semiconductor device, comprising:

I') the step of sticking the dicing tape integrated type

adhesive sheet according to claim 12 onto a semiconductor wafer,
and

II) the step of rendering the semiconductor wafer
permissible to be cut in order of I'-II or II-I', and further
comprising:

IV) the step of cutting the semiconductor wafer and the
adhesive sheet of the dicing tape integrated type adhesive sheet,
thereby yielding adhesive-sheet-stuck semiconductor chips
which are individual pieces, and

V) the step of bonding the adhesive-sheet-stuck
semiconductor chips onto a semiconductor-chip-mounting support
member.

15. The method of producing a semiconductor device
according to claim 13 or 14, wherein a method for rendering the
semiconductor wafer permissible to be cut is half cut dicing
or stealth dicing.